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ABSTRACT

Japan's economic success is clear evidence that purposeful investments in the educational quality of the work force pay major dividends in terms of enhanced productivity and increased competitiveness. The key elements of the Japanese system are, in fact, less than 40 years old. The current recession is a reminder of the transitory nature of economic trends. Within Japan, most discussions of the work force begin with the looming shortage of first-time workers and an expensive surplus of retirees. The Japanese have a relatively limited number of alternatives: increased use of female workers, greater use of older workers, increased number of guest workers, basic redistribution of workers from labor intensive sectors, and accelerated export of production jobs. The tightness of Japanese labor markets is a function of migration patterns that have yielded an economy and population increasingly concentrated in three areas: Tokyo, Osaka, and Nagoya. Side effects of educational competition include dwindling numbers of students in technical and vocational schools and increased costs of educating children that deter larger families and prolong the effects of the "baby bust." Changes for Japan may include a less rigid labor market, a shift to educational programs outside the firm, and an effort to apply the lessons of manufacturing efficiency to service sector industries. Numerous graphs and charts supplement the text. (YLB)

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Framing the Questions: A First Look at the Japanese Labor Market

by Robert Zemsky
Masako Kurosawa
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Framing the Questions: A First Look at the Japanese Labor Market

Increasingly, the analysis of comparative economic advantage has come to center on the relative quality of national workforces. There is a growing recognition that nations possessing the advantage of skilled and disciplined workers also have firms that are successful at developing new products and institutions capable of absorbing economic and technological change. Indeed, this focus on the comparative quality of workforces is now leading quietly to a redefinition of the concept of the firm in a market economy. Without abandoning the classical definition of the firm as a system for producing goods and services, a number of commentators have begun referring to the firm as a portfolio of human skills and competencies, both technical and behavioral. The efficiency of the firm can then be defined as a function of its ability to acquire and use employee skills.

This perspective frames our comparative study of the interaction between local labor and educational markets in Japan and the United States—in all, we have chosen four markets in Japan: Kitakyushu, Hiroshima, Nagoya, and Sapporo, with a specific focus on the Kitakyushu labor and education markets; and five markets in the United States: Atlanta, Indianapolis, Phoenix, Pittsburgh, and Portland, with a special effort to link the experiences of Pittsburgh and Kitakyushu as major "post-steel" cities. Our general focus is on skill acquisition and utilization. More specifically, we will be concerned with the interplay—within each national setting—among demographics, industrial structure, labor market composition, firm organizations and practices, and those public policies that most directly bear on the education and training of the workforce. Our analysis of these circumstances follows a broadly defined common format. The first step will be to develop a set of "Descriptive Notes" detailing the basic conditions and circumstances of each labor market. The next step will be to develop a set of detailed analyses for each labor market, the first of which will compare local and national trends in two critical areas: wage tenure profiles and industrial structure. A second analysis will focus on the process of school matching, school-to-work transitions, and changing patterns of family investments in education and skill training. For Kitakyushu and the five American cities, a third set of analyses will reconstruct the employment, training, and human-resource

policy histories of at least 15 enterprises, including one large manufacturing concern and three of its suppliers, one large service sector firm and three of its suppliers, a major retail firm, and, for the balance, a mix of small- and medium-sized firms. This set of analyses will be followed by structured interviews with key executives and a sample of current employees in each of the participating cities. For these cities, the final segment of each study will build on the econometric and enterprise analyses to frame a narrative description of the particular evolution and adaptation of each labor market to a set of specific policy initiatives.

In this first set of "Descriptive Notes" we outline the basic conditions and circumstances of the labor markets across Japan, drawing many of our examples from—and thus giving special emphasis to—the labor market that has at its center the City of Kitakyushu, Japan.

A Japanese Context

For outsiders, the structure and capability of the Japanese labor force has become something of a modern symbol of productive efficiency—clear evidence that purposeful investments in the educational quality of the workforce will pay major dividends in terms of enhanced productivity and increased competitiveness. The hallmarks of Japan's economic success are regularly recited by critics seeking to spur reform of both American businesses and schools. Most often cited is Japan's investment in basic education and in a schooling system that provides a skilled and disciplined workforce. Japanese firms are said to be particularly adept at investing in and utilizing worker skills, often spending considerable time and money for both on-the-job training and work-related education. Japanese firms are similarly portrayed as understanding the importance of retaining employees whose skills will be important in the long run—as opposed to retaining only those workers whose skills are necessary for the delivery of currently profitable goods and services. Such characterizations generally conclude that Japan's economic muscle owes much to a culture and educational system that yields teachable as well as disciplined workers; to a labor market that uses its schools to sort first-time workers into positions of permanent employment; and to the willingness of firms to make strategic investments in their workers, secure in the knowledge that they are not likely to take their skills elsewhere.

Within Japan the view is different, a function of longer memories and a natural interest in retaining competitive advantage. Because the purpose of most American characterizations of Japan is to spur change in the United States, the resulting portrayal of Japanese virtues becomes more an argument about, rather than a description of, the real workings of the economy in general and Japanese labor education markets in particular. What is missing is an understanding of the Japanese own understanding of how their system has evolved over the last 50 years—how much it has changed in the recent past and how much it must change in the near future.

The key elements of that system—seniority-based wage scales, long-term employment, enterprise unions, and firms assuming responsibility for advanced training and education—are in fact less than 40 years or two generations old. Until the 1960s, labor unrest was often the norm in Japan; "worker empowerment" and "task sharing" were good ideas yet to be tried. In Japan there remain vivid memories of economic dislocations, some caused by the war, others by the restructuring of the economy in the immediate post-war years. In northern Kyushu, for example, the closing of the coal mines in the 1950s still haunts those responsible for the region's economy. The downsizing of "big steel" and the end of the region's once-thriving munitions industry are still presented as contemporary events that must be accounted for when drafting economic plans. From this perspective, the "Japanese advantage" appears almost transitory, something

to be carefully monitored and adjusted in the face of constantly changing economic and political circumstances. The current recession in Japan is yet another reminder of the transitory nature of economic trends in general and the continuous search for appropriate wages and employment structures in particular.

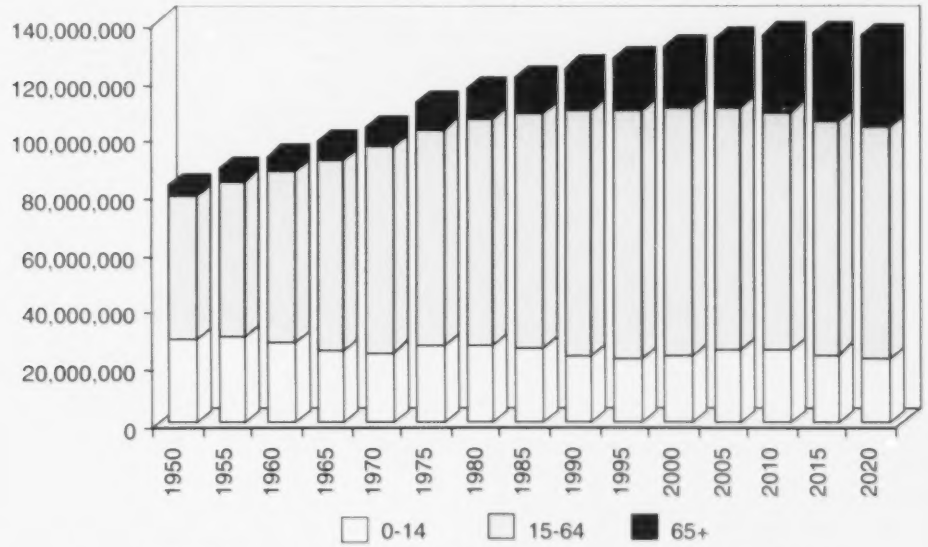
It is this sense of transition that best captures the view within Japan. The question being asked is not, "Why does the structure and functioning of our labor market confer a competitive advantage?" but rather, "What problems do we need to solve and what must we think about changing?" The answer to the latter question is just now beginning to take shape. One purpose served by the following description of some of Japan's current circumstances is to catalog those questions and possible answers in order to establish a more useful context for understanding the evolution and adaptability of the Japanese labor market. A second purpose is to provide the basis for a comparison of labor markets across the developed world.

The Demographics of a "Baby Bust"

Within Japan, most discussions of the workforce begin with the nation's shifting demographic profile, which in most standard Japanese statistical presentations is divided into three broad age bands: 0-14 years; 15-64 years; and 65 or older. It is the more than eight-fold growth in the size of this latter age cohort—from just over 4 million older persons in a population of 83 million in 1950 to a projected 32 million older persons in a population of 135 million in 2020—that most concerns the Japanese. What they see is an older age group increasing from just 5 percent of the population in 1950 to 10 percent of the population in 1985 to a projected 24 percent of the population in 2020.

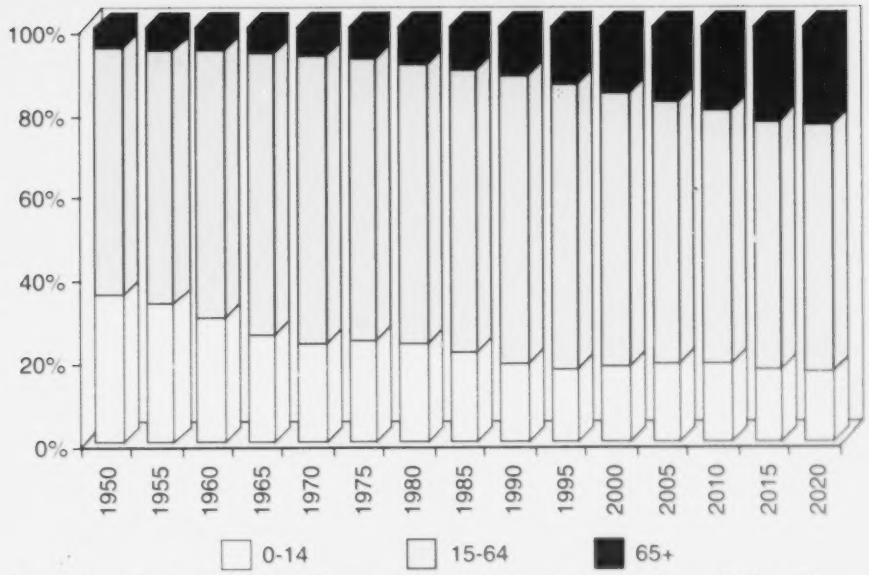
Figure 1a

National Population Age Composition: 1950-2020



Source: *Japan Statistical Yearbook*, Management and Coordination Agency, Japan (1991), p.38.
Note: Values after 1990 are predictions.

Figure 1b
National Population Age Composition
by Percentage: 1950-2020

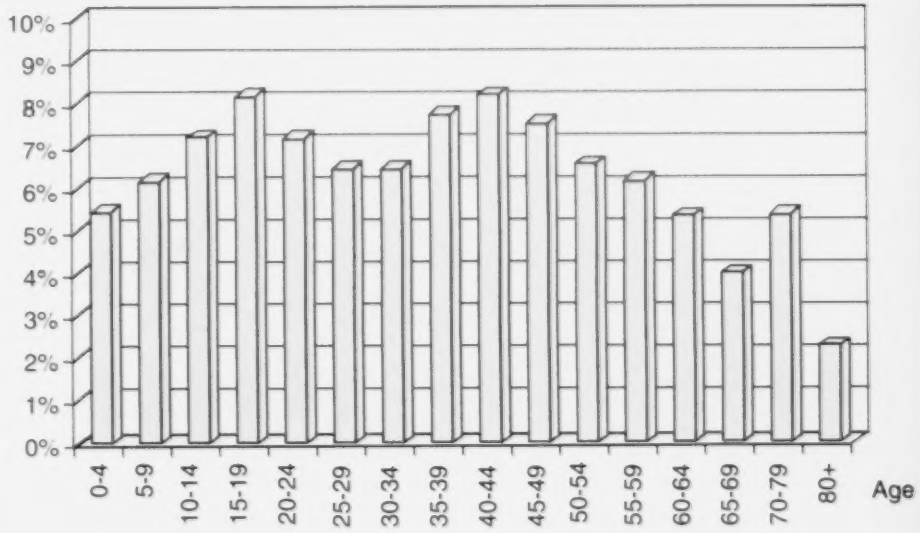


Source: *Japan Statistical Yearbook*, Management and Coordination Agency, Japan (1991), p.38.

The effects of the aging of the Japanese population have been both exacerbated and compounded by a series of ever steeper population waves that are working through the population profile. Figure 2a, which displays that profile in 1989 captures the undulating effect of Japan's three dominant population waves: those who experienced the war; their "baby-boomer" children; and their grandchildren, the children of the baby boomers who constitute a cohort that is smaller than that of their parents.

One result is a feeling within Japan that the nation faces a pair of increasingly intractable problems: a looming shortage of first-time workers and an expensive surplus of retirees whose benefits, under Japan's current "pay-as-you-go" pension schemes, will absorb an increasingly large share of the nation's gross national product. Given current practices and a labor force that is a constantly declining proportion of the population, the first 2.6% points of labor productivity growth through the year 2020 will be absorbed by the increasing

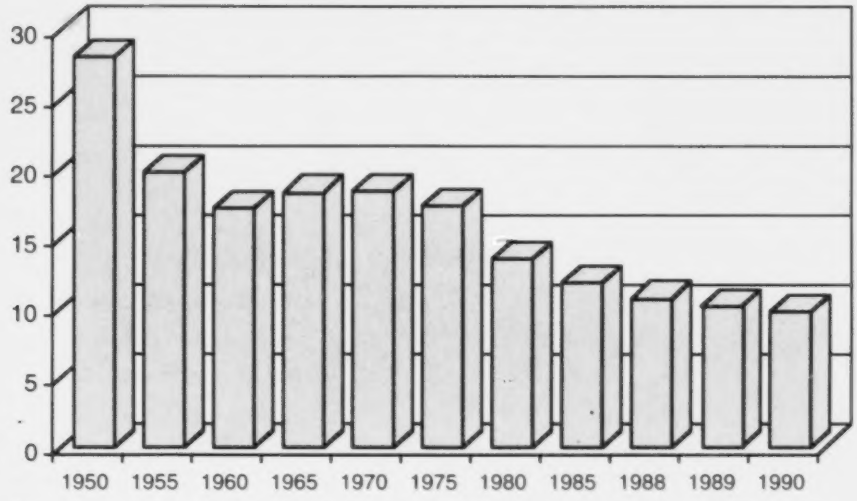
Figure 2a
National Population Profile: 1989



Source: *Population Census*, Management and Coordination Agency, Japan (1989).

Figure 2b

Births per 1000 Population: 1950-1990



Source: *Japan Statistical Yearbook*, Management and Coordination Agency, Japan (1991), p.51.

bill for retirees' benefits. Absent that growth, either the standard of living for employed workers will decline, benefits to retirees will have to be reduced, or the number of workers will have to be increased.

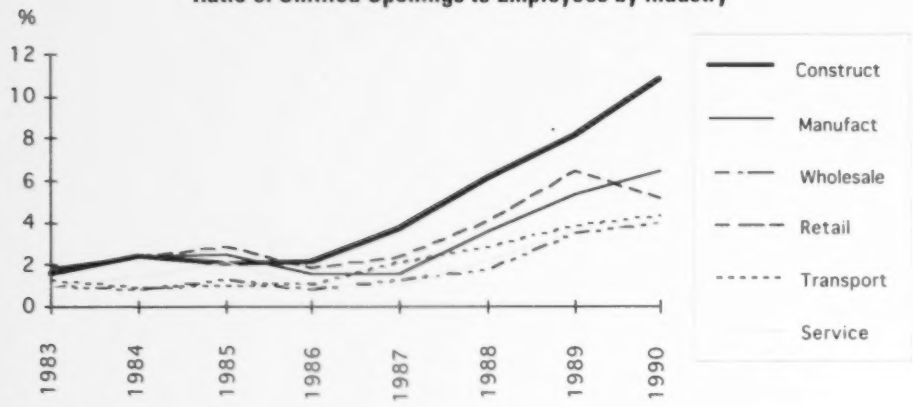
Even without the need to pay the costs associated with an aging population, the decline in the number of new workers entering the labor force is troubling to the Japanese. A smaller cohort of first-time workers must inevitably bid up the price of labor as well as limit the flexibility of enterprises to respond to new challenges and opportunities. Given the commitment of almost all large firms and many small- and medium-sized firms to seniority wage systems and long-term employment that favor young, first-time workers, the prospect is for increased labor shortages across the economy.

One way to understand the likely dynamics of Japan's future labor shortages is to focus on where the boom of the 1980s created "tight" labor markets, as measured by the ratio of unfilled openings per 100 employed workers. In 1983 most of these ratios were relatively constant across industries, firms of various sizes, regions of the country, and occupation. As the decade of the 1980s drew to a close, however, the experiences of different sectors and regions of the economy began to vary substantially. The most dramatic increase in labor shortages occurred in the construction industry, so that by 1990 that sector of the economy was reporting 11 vacancies for every 100 currently employed workers. The experience of the construction industry reflects the general resistance of the youngest cohort now entering the labor market to jobs involving the "3 Ks": *kitanai, kitsui, kiken* (dirty, tough, and dangerous).

The geographic distribution of these unfilled openings reflects the character of the economic boom that was creating a demand for labor in general and for young, first-time workers in particular that outstripped the available supply. In the early 1980's, most regions of the country were experiencing ratios of between .5 and 3.8 unfilled openings per 100 employed workers. By the close of the decade, most unfilled openings were in those parts of the country that had experienced the greatest in-migration over the course of the 1980s: the North Kanto, Tokyo, and Tokai or Nagoya regions. Even in the less booming labor markets, the number of unfilled openings increased steadily; in the Northern Kyushu region, for example, the ratio of unfilled openings per 100 employed workers increased from .5 to 2.75, though the general sense of these jobs was that they were less attractive than those in the three dominant labor markets.

Figure 3a

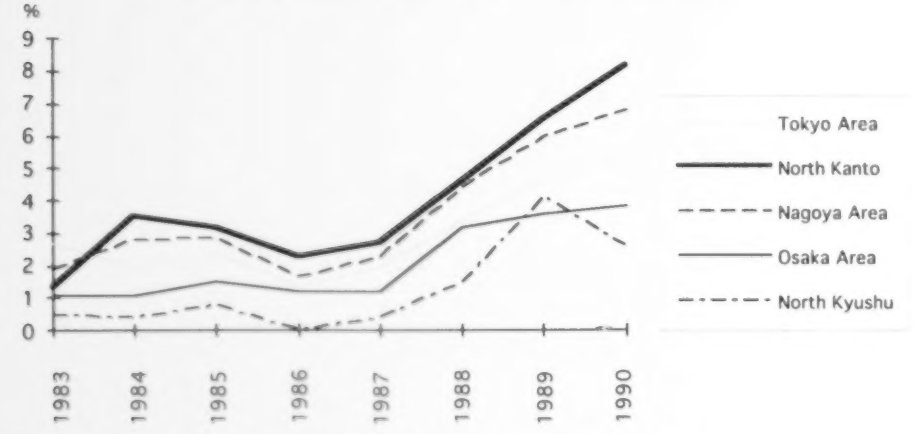
Ratio of Unfilled Openings to Employees by Industry



Sources: *Survey on Employment Trend*. Policy Planning and Research Department, Minister's Secretariat, Ministry of Labor, Japan (1989).

Figure 3b

Ratio of Unfilled Openings to Employees by Region



Sources: *Survey on Employment Trend*. Policy Planning and Research Department, Minister's Secretariat, Ministry of Labor, Japan (1989).
Note: Tokyo area: Tokyo, Kanagawa, Chiba, Saitama; North Kanto area: Ibaragi, Tochigi, Gunma, Yamanashi, Nagano; Nagoya area: Aichi, Gifu, Shizuoka, Mie; Osaka area: Osaka, Kyoto, Hyogo; North Kyushu area: Fukuoka, Nagasaki, Saga, Oita.

The distribution of vacancies by occupation tells much the same story. The relatively constant and undifferentiated pattern of the early 1980s gave way to a sense of growing differences by the close of the decade. Vacancies for unskilled labor were the most pronounced, reaching more than 10 unfilled openings per 100 employed workers in 1990. But following close behind at 8 unfilled openings per 100 employed workers were skilled workers and those in the transportation and communications sector of the economy.

Professional and service occupations experienced more modest increases in unfilled openings, while clerical workers experienced the least of all.

Finally, it is interesting to note that most of these unfilled openings were among small- to medium-sized firms, a continuing reflection of the divisions between large firms with established seniority systems and promises of permanent employment and the nation's smaller firms which tend to offer lower wages, less

opportunity, and less employment security. Large firms had their average number of unfilled openings increased to just under 2 per 100 employed workers. Among the nation's smallest firms, those with less than 30 workers, the unfilled openings increased to more than 8 per 100 employed persons.

The distribution of these shortages, occurring during a period of sustained economic growth and an increasing pool of first-time workers, foreshadows the decades ahead when the number of first-time workers entering the labor market will likely decrease substantially. The geographic differences and hence strains in the economy could become even more exaggerated as the lure of the Tokyo-Osaka-Nagoya areas accelerate the draining of other parts of the Japan of their youth. Construction and even skilled manufacturing jobs would prove increasingly hard to fill, while the capacity of small- and medium-sized firms to form and prosper would be severely limited.

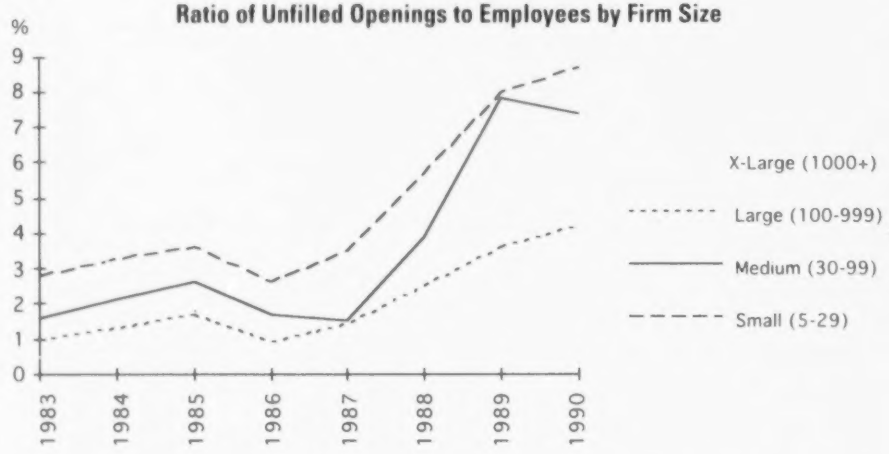
Figure 3c

Ratio of Unfilled Openings to Employees by Occupation

Source: *Survey on Employment Trend*. Policy Planning and Research Department, Minister's Secretariat, Ministry of Labor, Japan (1989).

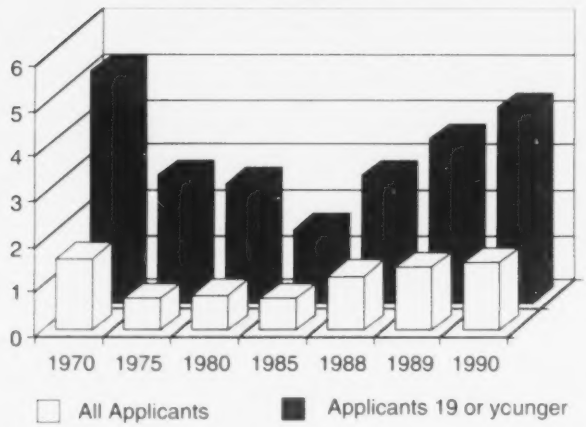
Figure 3d

Ratio of Unfilled Openings to Employees by Firm Size



Source: *Survey on Employment Trend*. Policy Planning and Research Department, Minister's Secretariat, Ministry of Labor, Japan (1989).

Figure 3e
Registered Job Openings per Registered Applicant for Full-Time Employment: 1970-1990



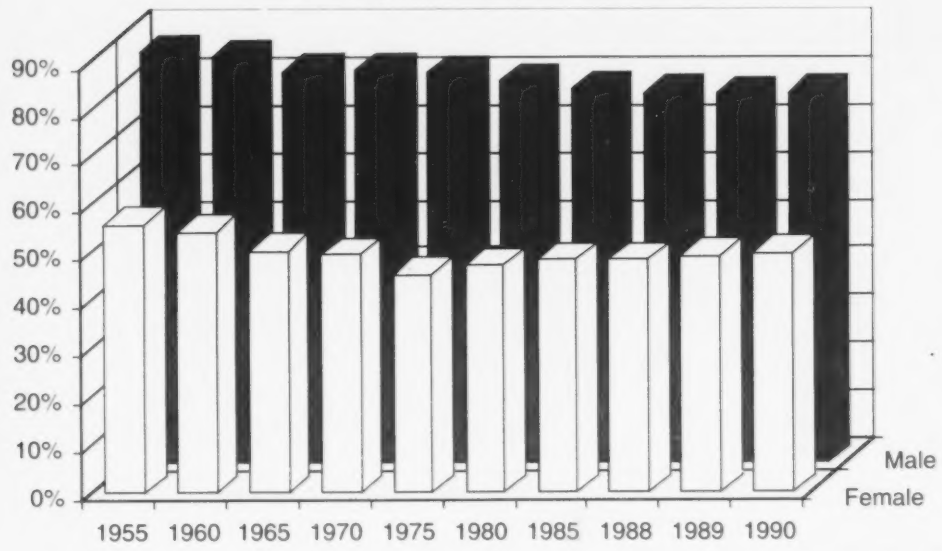
Source: *Report on Employment Service*, Bureau of Employment Security, Ministry of Labor, Japan (1970-90).
Note: Excluding new school leavers, including part-timers.

What concerns the Japanese most is the sense that given current assumptions about starting wages, the distribution of workers across sectors, and the nation's historic labor participation rates, there simply may not be enough workers either to operate the economy or to pay the costs of caring for an increasingly elderly population. Though these concerns are most often expressed in terms of a looming shortage of first-time workers, the root causes may in fact be more complex, involving, as they do, historic and cultural barriers to increasing the labor participation rates of women and immigrants, in particular, and to achieving a better, more efficient distribution of labor among the various sectors of the economy. Even as the economy cools, the push for a shorter work-week and the greater resistance to jobs involving the 3 Ks may exacerbate the mismatch between workers and jobs. For the moment, most firms are coping with this labor market "tightness" through greater use of part-time workers, predominantly women and retired employees willing to work without benefits for substantially lower pay. As the number of prime-age workers decreases, however, these part-time workers are likely to demand both benefits and better pay.

There is also growing evidence that some small and mid-size firms have begun to offer higher starting salaries as well as to "buy-away" experienced workers from other, mostly larger firms. While increasing wages and signing bonuses can help achieve a more efficient distribution of labor across the economy, they may also shift the problem from one firm, region, or sector to another.

Over the long run, the Japanese will have to choose among a relatively limited number of alternatives as they seek to compensate for both the declining number of first-time workers and the consequences of an aging population. One choice would be to increase the use of female workers across the economy. Education rates for males and females are at parity through upper-secondary school. General post-secondary participation rates are approaching parity, although female students are still likely to attend two-year and specialized programs or university courses in subjects other than science and engineering. The female population represents a sizable talent pool in which substantial educational investments have already been made. Turning a greater proportion of this population into full-time workers who remain in the labor force throughout their adult lives, however, immediately poses three demands: substantial changes in the perception of women as workers; corresponding changes in the functioning of the family; and changes in the workplace to better accommodate women workers whose major employment status of female workers has already shifted from "family workers" to "employees." Equally problematic is the fact that augmenting female participation in the workforce will likely further reduce the nation's birth rate, thus eventually exacerbating the effects of the "baby bust."

Figure 4a.
Labor Participation Rate by Gender: 1955-1990

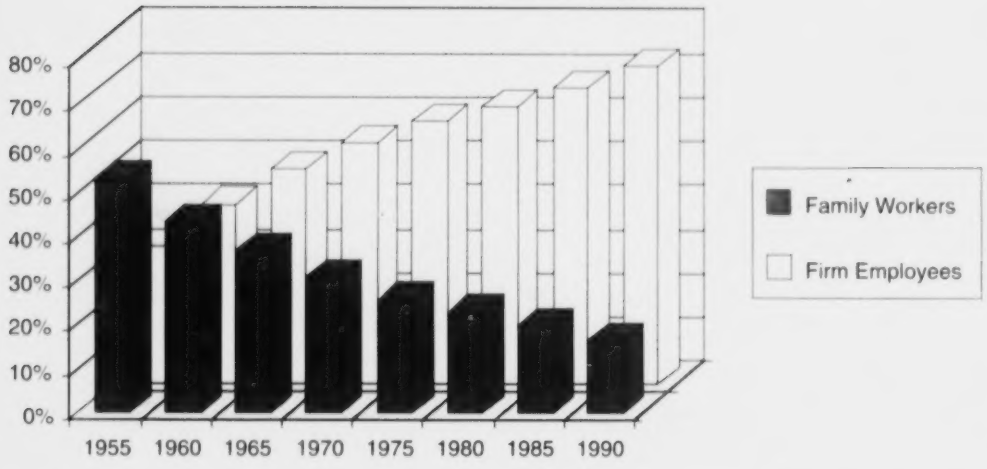


Source: Japan Statistical Yearbook. Management and Coordination Agency, Japan (1961), p.44 and (1991), p.70.

A second option is greater utilization of older workers. As in the case of women workers, older workers are already being retained in the workforce as part-time employees seeking supplemental incomes. Most observers now agree that some lengthening of the work lives of older Japanese is essential in order to reduce the cost of funding their retirements. Still, there will also be substantial offsetting costs. Further use of older workers may reduce the historically high rate of personal savings among workers who in part save for their relatively early retirements—and indeed, the Japanese are already worried about a decline in the savings rate from a 22.8 percent high in 1975 to 14.2 percent in 1989. While retaining older workers longer might reduce the need for first-time workers, it is a strategy most firms will find sufficiently inconsistent with current practice, which will make its adoption unlikely. Retaining older workers would require substantially changing compensation systems as well as Japan's traditional training programs that allow firms to recoup the investment in training of young workers over the full course of their employment.

A third option is to increase the number of guest workers. The precise number of foreign workers currently employed in Japan is already the subject of active speculation. But nearly everyone agrees that the relatively modest number of foreigners granted valid working papers—just over 120,000 in 1987—substantially understates the growing pool of non-Japanese workers drawn principally from Pakistan, India, and South East Asia. As in most other countries, these workers are concentrated in menial jobs, often in construction, that require little or no training. With the growth in the number of foreign workers, undocumented as well as documented, have come new concerns about human rights as well as a reinforced sense of the cultural dissonance foreigners have historically encountered in Japan. The experiences of European countries with "guest workers" have further dampened Japan's enthusiasm for relying on other than its own. Still, the first tentative steps have been taken to establish a framework for admitting guest workers. Testable skill standards are being developed that can be applied to migrants seeking employment in Japan. There is a clear decision to make competency in the Japanese language a prerequisite for migration. The problem the Japanese have yet to solve, however, is how to make certain that guest

Figure 4b.
Percentage of Employed Female Workers by Employment Status: 1955-1990



Source: Japan Statistical Yearbook, Management Coordination Agency, Japan (1991), p.72.
Note: Employees are persons who work for wages or salary as employees of firms, unincorporated enterprises, corporations, and government. Family workers are persons who work in an unincorporated enterprise operated by a member of a family.

workers can be sent home when the demand for their labor lessens.

A fourth option involves a basic redistribution of workers from those non-manufacturing sectors of the economy that are particularly labor intensive. One example is Japan's retail and distribution systems. Most Japanese retail outlets have remained small, "mom-and-pop" operations that depend on literally hundreds of small trucking companies, many of which are family enterprises themselves, to keep them constantly supplied with products. Were Japan to encourage the rationalization of its retail and transportation systems, creating larger firms and franchises that retain greater inventories, these sectors would require significantly fewer workers. The problem is that these sectors of the economy grew as they did as part of Japan's otherwise successful strategy of maintaining the importance of family enterprises as the population moved from the countryside to the city. To make those members of the family simply employees of large retail chains or larger transportation firms would again mean changing basic social values for both workers and consumers.

A fifth option for adjusting to changes in the expected supply of labor is to accelerate the export of production jobs to nations with labor surpluses that represent substantial markets for Japanese products. Already, Japanese firms have extended their programs of foreign investment in the People's Republic of China, across Southeast Asia, and, to a lesser extent, in North and South America. There may, however, be a political limit to such a strategy given the perceived need of the economy to preserve manufacturing jobs as an offset to a prolonged recession among Japan's principal trading partners.

Increasing Geographic Concentration

The Japanese also have a sense that the tightness of their labor markets is a function of migration patterns that have yielded an economy and population increasingly concentrated in three areas: Kanto-Tokyo, Kansai-Osaka, and Tokai-Nagoya. Over the course of four decades, there has been a 14 percentage point shift in population from other parts of Japan to the Tokyo, Osaka, and Nagoya areas—from just

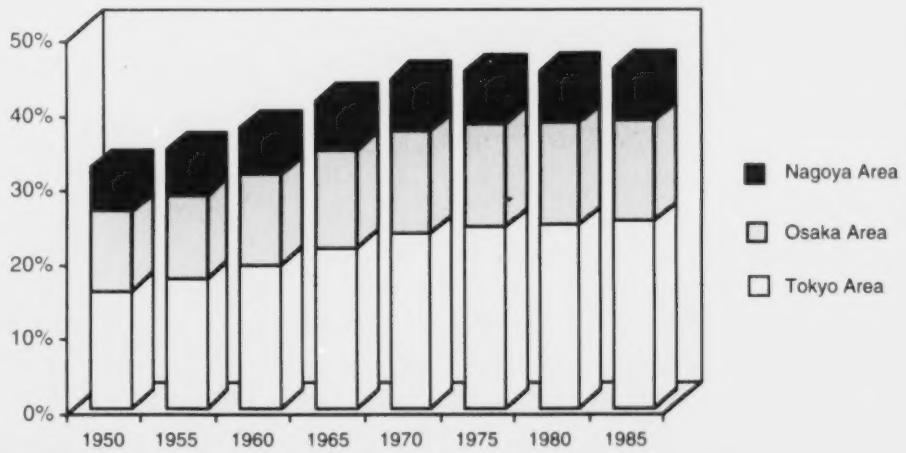
under a third of the population (32 percent) in 1950 to just under half (46 percent) in 1990. The first wave of migration toward these areas, reflecting the growth of heavy manufacturing, occurred in the early 1960s. During the 1970s, governmental policies sought to reverse these shifts both by investing in the infrastructure of areas outside of the Tokyo-Osaka-Nagoya centers and by providing incentives to manufactures to locate major plants in these outlying regions. Then, as the industrial structure gradually shifted toward tertiary sectors in the 1980s, the second wave of migration occurred, mainly toward the Tokyo area, where information services are concentrated.

To be sure, there are other examples of population growth. Kitakyushu's neighbor Fukuoka, for example, has experienced growth almost as dramatic as that of Tokyo, nearly doubling in population and thereby becoming Japan's seventh largest city. But the fundamental concentration of population continues nearly unabated. If present trends continue, the three major metropolitan areas will have more than half of Japan's population by the close of this century.

The "losers" in these population shifts are cities like Kitakyushu, which have remained largely unchanged in size, though substantially older in composition. As the number of eighteen-year-olds declines, what cities like Kitakyushu fear most is that their scarcest commodity, well-educated first-time workers, will be the first drawn to Tokyo or Nagoya or Osaka or to the regional magnet like Fukuoka. What will be left behind is a population that is older, less skilled, and less able to sustain the economic vitality of the community.

The Kanto-Kansai-Tokai regions dominate in other ways as well, thus further impeding Japan's quest for an economy less concentrated in the nation's three principal labor markets. Most economic analyses focus primarily on national trends which, because of their dominant share, largely reflect the experience of the Kanto-Kansai-Tokai economies. The principal analytic subdivisions are not regional, but functional, following definitions and agreements forged among the interested ministries in Tokyo. Not unexpectedly, key responsibility for the nation's economic agenda, including the role education and training plays in developing a competitive labor force, is distributed among the ministries of Finance, Trade and Industry, Education, and Labour. Though much of the problem centers on the need to stimulate local economies, there is surprisingly little analytic

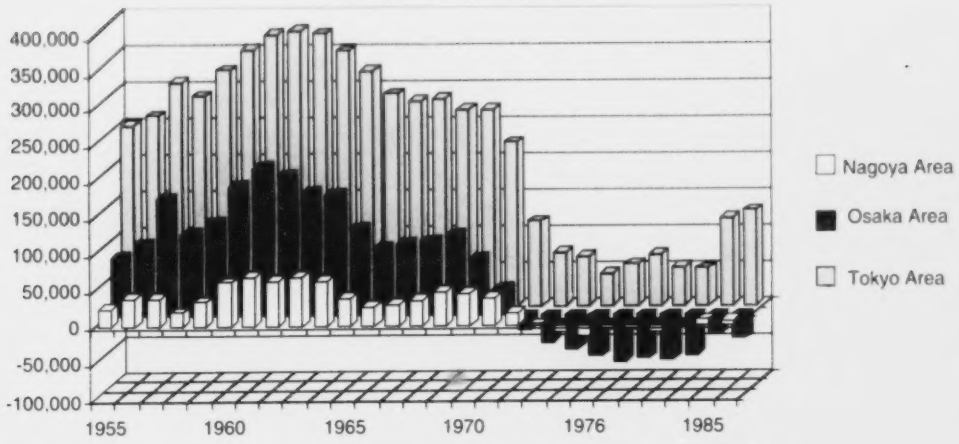
Figure 5a
Share of National Population: 1950-1985



Source: Population Census, Management and Coordination Agency, Japan (1950-1985).
Note: Tokyo area: Tokyo, Kanagawa, Chiba, Saitama; Nagoya area: Aichi, Mie (Gifu not included); Osaka area: Osaka, Kyoto, Hyogo.

Figure 5b

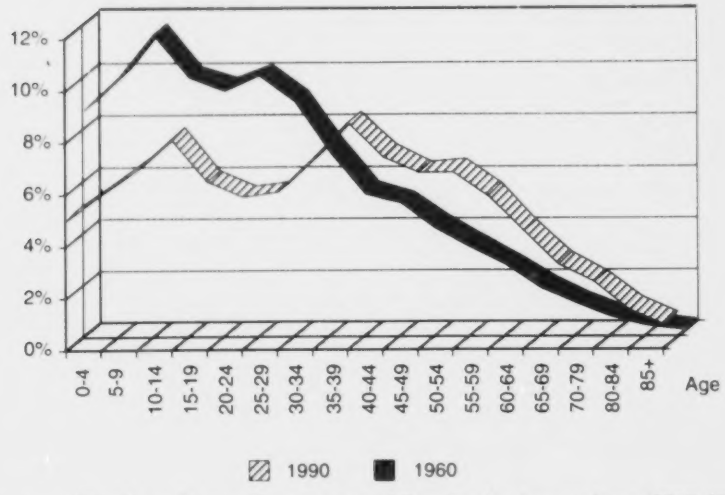
Net Migration Flows: 1955-1985



Source: Basic Resident Registers, Management and Coordination Agency, Japan (1955-85).
Note: Tokyo area: Tokyo, Kanagawa, Chiba, Saitama; Nagoya area: Aichi, Mie (Gifu not included); Osaka area: Osaka, Kyoto, Hyogo.

Figure 6a

Kitakyushu City Age Profiles: 1960 and 1990



Source: Population Census, Management and Coordination Agency, Japan (1960, 1990).

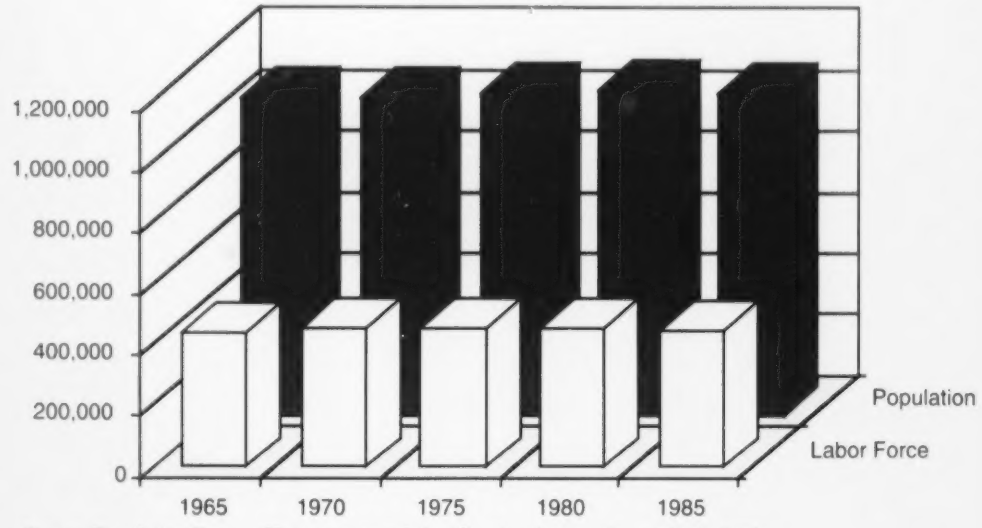
attention paid to the nature of local labor markets and how the experience of one locale might differ significantly from the portrait of the Japanese economy drawn from the detailed analysis of national trends.

Within this traditional focus on national trends and the functional alignment of analytic and ministerial responsibility, the role of the Home Ministry is beginning to take on a special importance. In its responsibility to oversee and assist localities and their administrations, the staff of the Home Ministry is coming to appreciate the need for a better integration of economic, labor, and education policy at the local level. As regional cities like Kitakyushu, often with the direct support of the Home Ministry, develop economic revitalization plans for themselves, they become important sites for testing Japan's capacities to evaluate the demographic and geographic choices it faces.

The Side Effects of Educational Competition

Figure 6b

Kitakyushu City Population and Labor Force: 1965-1985



Source: Population Census, Management and Coordination Agency, Japan (1965-1985).

Concerns about the future supply and distribution of labor over the next two decades have become increasingly entangled with concerns about changes in both the structure and the distribution of education. What the Japanese have come to realize is that they, perhaps more than any other industrial society, have made educational competition the principal means of matching new workers and employing enterprises. Every Japanese student and parent knows how much one's future depends on a successful performance on the myriad of competitive examinations that govern entrance into upper-secondary school, into universities and colleges, and into the specialized training courses that are increasingly being used to supplement basic schooling. So fierce is this competition among students and their families that it has been given a specialized name of its own, *jyuken-senso*, which roughly translates into English as "examination wars."

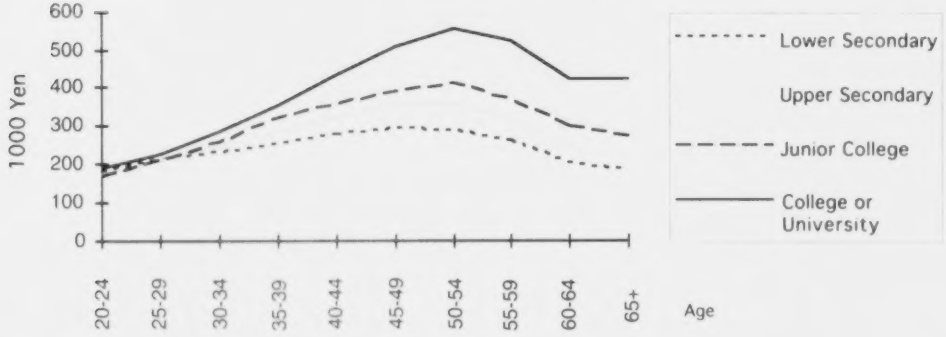
The worry is that the competition for university places which occasions these exam wars now threatens both the historic diversity of the Japanese educational system and the efficiency with which the Japanese matched school experiences and future jobs. The hallmarks of the Japanese system have been well celebrated. Relying on both national curriculum and national standards, Japanese schools stressed general capabilities, rigorous testing, and a work ethic that consistently rewarded extra effort. Educational success was then translated into social mobility by a series of entrance exams that help to sort students, first into lower-secondary and then into upper-secondary schools, preparing some for university and others for entry into the labor force immediately upon graduation. Individual schools, particularly at the upper-secondary level, developed signatures of their own by establishing relationships with individual employers for non-college-bound students as well as reputations for helping their students gain admission to Japan's top-ranked universities.

In the process of helping their students succeed educationally, Japanese families made two important discoveries that lie at the heart of the competitive dilemma. The first discovery was simply that the rewards and incentives were all stacked in favor of the nation's university graduates—admission to a university guaranteed a better life; admission to a top-ranked university guaranteed economic success.

Even if the university was not top ranked, the expected wage differentials between university and upper-secondary school graduates were substantial. In 1990, male university graduates, on the average, were earning 30 percent higher salaries by the time they were in their forties than their counterparts with just an upper-secondary school diploma. The differentials for women who remained in the workforce were roughly the same.

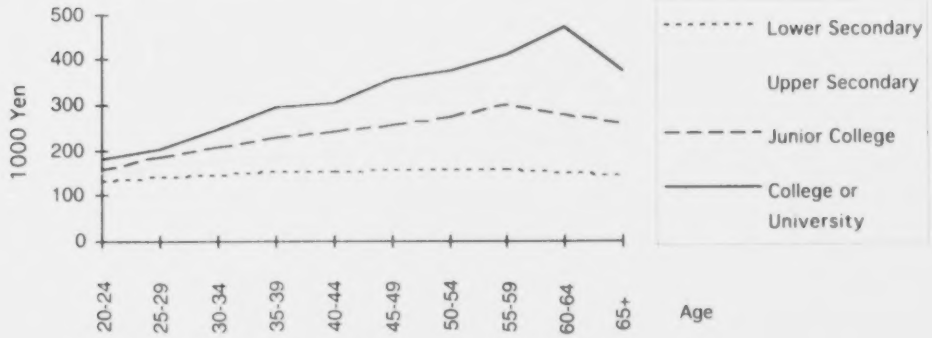
The second discovery was that extra effort in the form of exam-coaching paid substantial dividends—as long as the benefiting students were willing to invest their own time and energy and their families were able to pay the often sizable tuition the private "cram schools" demanded.

Figure 7a
Average Monthly Earnings Profile
by Educational Attainment: 1990 (Male)



Source: *Basic Survey on Wage Structure*. Ministry of Labor, Japan (1990).

Figure 7b
Average Monthly Earnings Profile
by Educational Attainment: 1990 (Female)



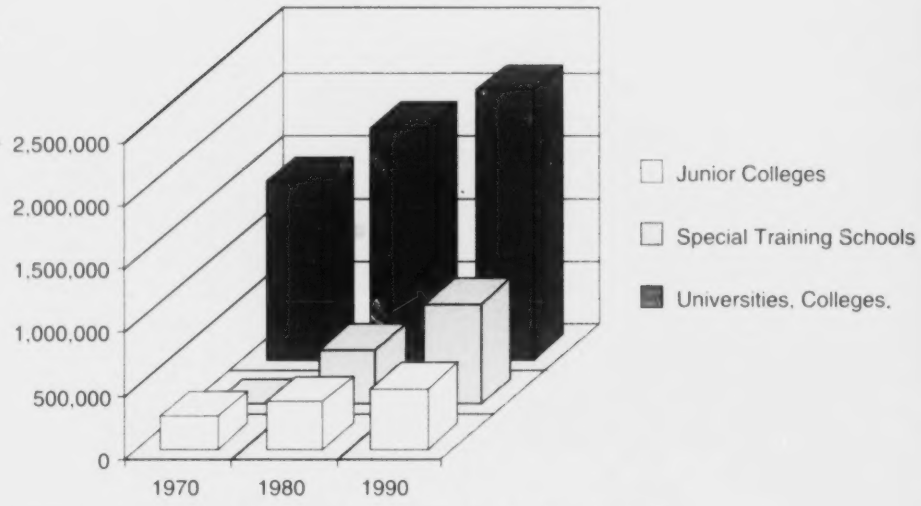
Source: *Basic Survey on Wage Structure*. Ministry of Labor, Japan (1990).

The result is an educational system whose curriculum has come to be understood by students and parents alike as a kind of "training exercise," much like an Olympic athlete's training course, designed to test endurance and performance. Even "cram schools" routinely impose competitive entrance exams as a prerequisite for buying their services. As a result, the Japanese educational system is losing its diversity of mission to the singular importance now attached to preparing students for admission to a university or college. In the competition for the dwindling number of students, technical and vocational schools are losing out to upper-sec-

ondary schools which offer the general university preparatory course. In the Kanto and Kansai regions, this pattern has taken on an added importance as private upper-secondary schools—with tougher entrance requirements and higher rankings in the annual competition to place students in the nation's most prestigious universities—have now come to dominate the mix of educational suppliers. As more Japanese families refuse to settle for anything less than a college or university education for the children in whom they have invested so much, the enrollments in Japan's colleges and universities have grown from 1.4 million in 1970 to 2.1 million in 1990, a 50 percent increase over the course of a single generation. Enrollments in junior colleges grew from 263,000 in 1970 to 479,000 in 1990; the same year, 793,000 students enrolled in specialized training colleges—a category that did not officially exist in 1970.

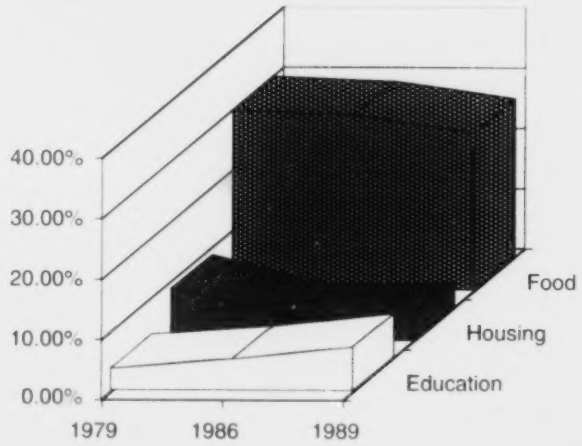
The impact of these shifts is being felt everywhere. The increasing cost to families of educating their children has in itself become a deterrent to larger families, thus prolonging the effects of the "baby bust" of the 1970s and

Figure 8a
Post-Secondary Enrollments: 1970-1990



Source: *School Basic Survey*, Ministry of Education, Japan (1970, 1980, 1990).

Figure 8b
Average Share of Living Expenditure of Married Couples with Children (National)



Source: *National Survey of Family Income and Expenditure*, Management and Coordination Agency, Japan (1979, 1986, 1989).

1980s. Large employers who once recruited their workers by relying on a network of well placed high school counselors, are no longer certain they know where the next generation of blue collar technicians will come from and whether or not they ought to begin recruiting for these jobs the graduates of Japan's less prestigious colleges and universities.

The effect on students may prove even more problematic. Already there is a concern that the rewards of school success involve neither skills nor knowledge, but entrance into a prestigious university where one is too seldom required to work very hard. Ironically, perhaps, those who have proven most successful in this competition are showing signs of impatience at having to wait for the material and other rewards that await the assumption of managerial responsibility within their enterprises. Some of this impatience is exhibited by a willingness to be enticed into working for small- and medium-sized firms that offer higher salaries and greater initial responsibility. In other cases it is the new willingness of valued employees to consider switching firms. In still other cases, this impatience is manifested in the frenzied spending (and accompanying consumer credit default rates) that characterizes the habits of some of Japan's young university graduates.

Just as significant are the more subtle and potentially more lasting effects that the singular importance attached to university admission is having on Japanese education and the preparation of the workforce. There is a polite, yet open, skepticism about the substantive as opposed to the prestige value of university degrees in the humanities and social sciences. Many students in those programs, particularly those in the less prestigious universities, are supplementing their formal education by enrolling in private technical schools. This extends the pattern of dual education initially introduced by the "cram schools" as well as the reliance on private financing of educational investments. For the first time, there is a broad recognition that formal, post-graduate technical education, in both engineering and business, will be increasingly required by key elements of the Japanese labor force. Such post-graduate education would both supplant and supplement the advanced education traditionally supplied by firms to their most educated workers. The question is whether the products of Japan's universities, while still the best, brightest, and most competitive of their respective generations, are prepared to invest the personal time and intellectual curiosity such training demands.

A Changing Mix of Skills, Jobs, and Enterprises

Japan, like the rest of the world's most developed economies, is experiencing a fundamental shift away from large-scale manufacturing employment in favor of service sector employment. Between 1969 and 1986, tertiary sector employment grew from 22,000,000 to 35,840,000, representing an overall growth in the tertiary sector's share of employment from 57 percent to 65.9 percent. This shift in the country's industrial structure has given new importance to Japan's small- and medium-sized firms, which often remain outside the traditional employment system with its emphasis on seniority-based wages, lifetime job tenure, and firm-provided education and training.

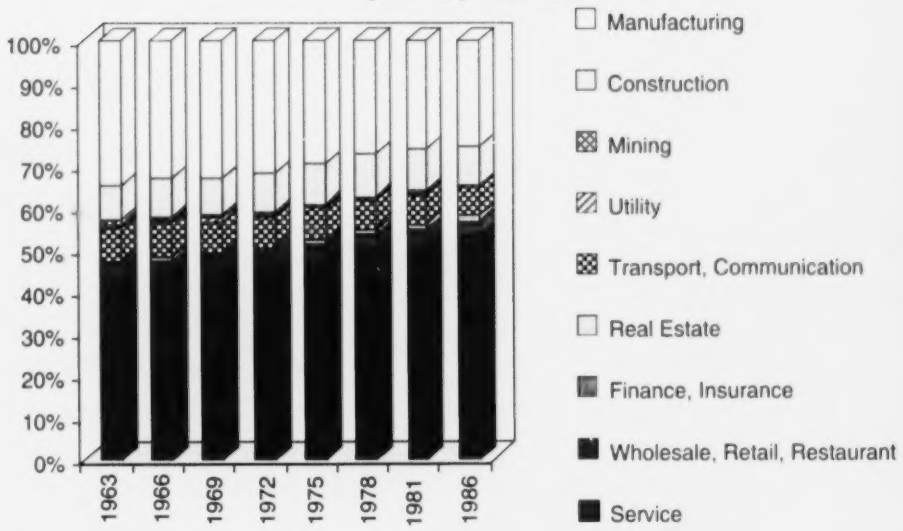
The data for the City of Kitakyushu exemplify the impact of these shifts on the local level. In the course of four decades, the city's largest employer, Nippon Steel, has lost nearly 75 percent of its employment, declining from just under 40,000 in 1960 to just over 10,000 in 1990. Employment in mining has all but disappeared and even Yasukawa Electric, in many ways the model of a modern manufacturing concern, had 1400 fewer employees in 1988 than in 1965—a 40 percent decline. Service sector employment has more than doubled, from 54,000 to 108,000. More telling has been the shift to small firms, employing four or fewer employees. Almost all of the growth in the number of establishments over the last 23 years—22,000 additional firms— has

been an increase in firms with fewer than 10 employees.

The rise of the service sector has also occasioned the asking of a host of new questions. In service industries, does Japan have the same competitive advantage that it enjoys in manufacturing? Can automation and advanced robotics, coupled with substantial investments in work-related training and education, yield the same level of efficiency and increased productivity? Can the often smaller service sector firms sustain sufficient growth to encourage investing their own capital in the training of their employees? Are the costs often associated with internal overhead and the transportation of products and workers irreducible, or are they amenable to more careful management?

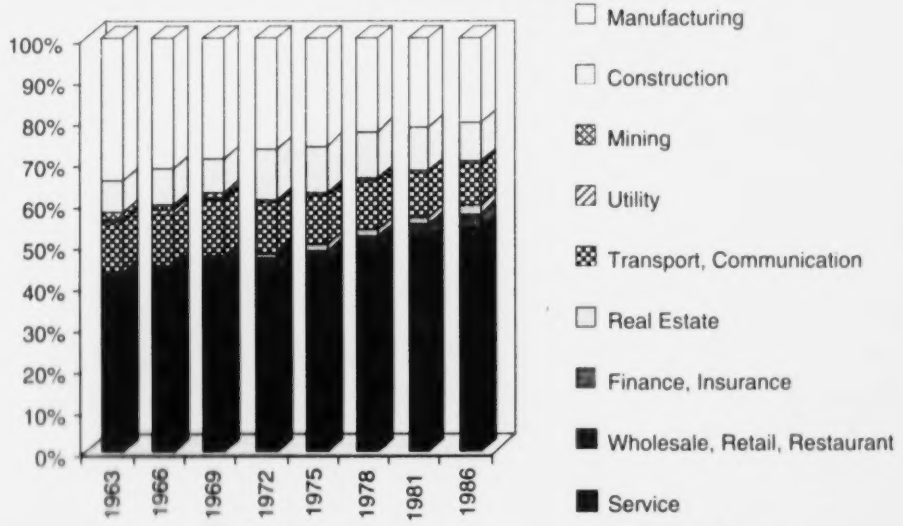
The answering of these questions has been made more uncertain by a basic change in the technological nature of work in Japan and the fact that familiarity with computer systems is becoming a generic skill that makes formal on-the-job training programs less important. In its growing utilization of central processing units (CPUs) in the

Figure 9a
National Share of Private Employment by Industry: 1963-1966



Source: *Establishment Census*, Management and Coordination Agency, Japan (1963-86).

Figure 9b
Kitakyushu Share of Private Employment by Industry: 1963-1986

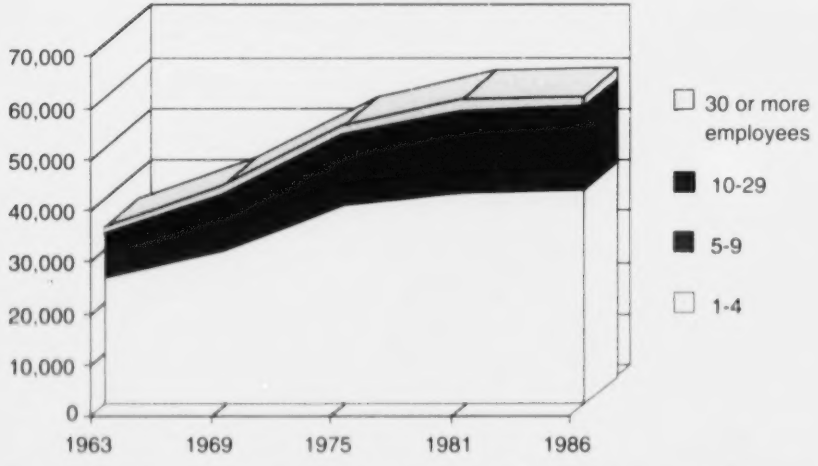


Source: *Establishment Census*, Management and Coordination Agency, Japan (1963-1986).

manufacturing and service industries. Japan is second to none in its embrace of automation and computerized operations. The video display screen has become a standard instrument in enterprises as disparate as steel fabricators, banks, travel agencies, and government offices—and that's the point. The management of production processes and transactions by video terminal is becoming an interchangeable skill that can be readily applied in a number of quite different settings and enterprises. As firm-specific knowledge becomes less important, the competitive advantage that has accrued to firms with stable labor forces and established programs of on-the-job training and work-related education is reduced. The more interchangeable work skills become, the greater the temptation for individual firms to "buy" the skills they need rather than to cultivate them themselves through substantial investments in the training of new workers. Nonetheless, the skills obtainable outside the firm can't be substituted for the comportment training firms provide, and their relative importance is likely to vary increasingly across industries, firms, and occupations.

That choice may prove irresistible in an increasingly tight labor market characterized by a chronic shortage of first-time workers. The compounding effects of the "baby bust" of the 1970s and 1980s, the growth of the service sector, the enhanced importance of small- and medium-sized firms with higher turnover rates, and the growing importance of interchangeable skills based on computer technologies may mean real changes are ahead for the Japanese economy and workforce—changes that herald a less rigid labor market, a shift to educational programs outside the firm that teach immediately applicable job skills, and a concentrated effort to apply the lessons of manufacturing efficiency to service sector industries. In such an economy, there would be enhanced mobility for workers in mid-career; blatant wage competition between the country's more established firms and those newer, often smaller enterprises that are leading the shift to a service economy; and continued growth of specialized training schools, both public and private.

Figure 10a
Number of Establishments in Kitakyushu by Number of Employees: 1963-1986



Source: *Establishment Census*, Management and Coordination Agency, Japan (1963-86).

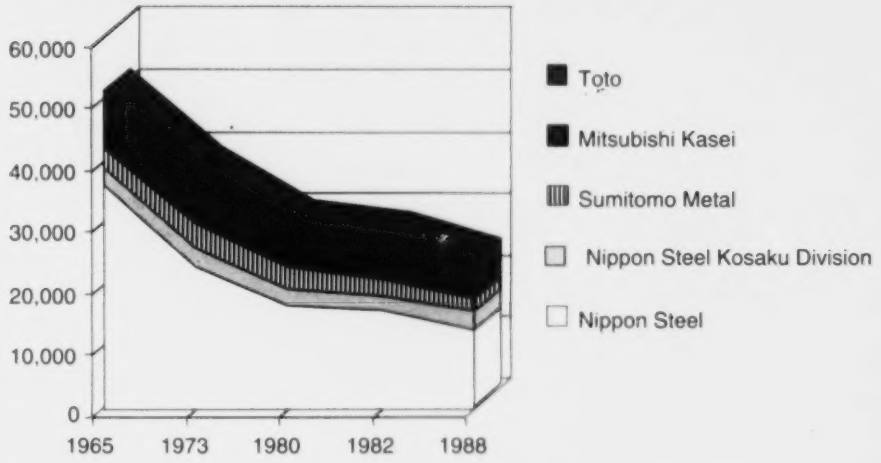
Study Protocol

The comparative analysis of the interaction of labor and education markets will address these issues by focusing on the changing composition of production and the workforce, the possible increase in the privatization of education, and the changing allocation of training between enterprises and educational institutions. The analysis of the four Japanese labor/education markets will begin with a statistical assessment of the changing economic and social climate

of each city. In order to describe the structure of each regional labor/education market as a whole, the relation with other regional markets will also be analyzed. In the case of Kitakyushu, for example, comparisons will be made with nearby Fukuoka. Within this framework, the study will use five perspectives to examine each labor/education market's adjustment to the changes in demographic, economic, and social structures.

Figure 10b

Employment by 5 Largest Manufacturing Firms in Kitakyushu: 1965-1988



Source: *Kitakyushu-shi Keizai no Genjyou*. Kitakyushu-city Economics Bureau (1991).

1. **Changes in industrial structure and environment.** Much can be discovered about trends in the industrial environment by concentrating on the evolution of the employment structure, the size and mix of enterprises, and the changes in the local labor supply in terms of quality, demographic characteristics, and workers' values. For instance, to what degree have there been changes in the rate of participation in the labor force by women, in the shift away from heavy manufacturing towards service activities, and in the utilization of new technologies? To what extent does the mix and importance of these factors vary across specific labor/education markets? Answering these questions means measuring the secular as well as regional changes in the labor supply, thus setting the context for subsequent analyses.

2. **Changes in wage-tenure profile.** This analysis will examine how systems that are considered unique to Japan (such as Nenko and lifetime employment systems) have adapted to secular changes in the environment through analysis of (1) wage-tenure profile, turnover rate, and extent of overtime work over different industries, cohorts, and firm sizes; and (2) the extent to which this adjustment varies across individual labor/education markets. By estimating the wage-tenure relationship, this analysis will attempt to deduce the degree and effect of human capital investment on workers.

3. **The nature of the school system.** The accepted view of Japan's formal educational system is that it is relatively homogenous in comparison to most other developed nations, and that it succeeds in sorting and matching students for further schooling or for jobs based on common knowledge about the merits of further schooling and work options. These characterizations raise questions that will be examined in this study: Does the sorting and matching process truly reflect the merits of both students and schools? Are school ranks determined by the options of their graduates? What association is there between school characteristics and individual characteristics and post-school activities?

4. **Household expenditures on education.** In addition to the growing use of private cram schools as educational supplements, there has been a parallel increase among high school graduates for training at private vocational and specialized schools. The inevitable result is that education expenditures within individual households continue to rise. This segment of the analysis examines, over time and across regions, the factors behind this increase in educational investment—in particular the tradeoff between this investment and household savings, household educational and demographic characteristics, and changes in social consciousness toward education.

5. **Employee development within the enterprise.** It is believed that most post-schooling training occurs within the firm, at least in large enterprises, in the form of on-the-job training and job rotation. There is, however, a lack of available data about training within enterprises. In this section of the study, firm policies and practices regarding worker training will be analyzed by examining: personnel management; human-resource development; worker evaluations; and work-incentive schemes. In addition, this section will include an analysis of the degree and content of skill and technology transfer between large firms and subsidiary (*keiretsu*) companies within the region, as well as an examination of the firms' relationships with regional vocational education institutions, both public and private. This aspect of the analysis may be confined to the analysis of firms within the Kitakyushu labor/education market.

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